



The California Hydrogen Highway Network

Economy Team Public Meeting

Diamond Bar, California

September 14, 2004

Daniel Emmett

Executive Director, Energy Independence Now
Advisor to CA Hydrogen Highway Network Initiative

State of the State

I am going to encourage the building of a hydrogen highway to take us to the environmental future...I intend to show the world that economic growth and the environment can coexist.

And if you want to see it, then come to California.

Governor Arnold Schwarzenegger

January 6, 2004



$$\left[\frac{p^2}{2\mu} + V(r) \right] \psi(r) = E \psi(r)$$

California Hydrogen Highways
www.hydrogenhighway.ca.gov

Executive Order S-7-04 signed on April 20, 2004



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Executive Order S-7-04

- BE IT ORDERED that the State of California is committed to achieving a clean energy and transportation future based on the rapid commercialization of hydrogen and fuel cell technologies; and
- BE IT FURTHER ORDERED that the California Environmental Protection Agency, in concert with the State Legislature, and in consultation with the California Energy Resources Conservation and Development Commission and other relevant state and local agencies, **develop a California Hydrogen Economy Blueprint Plan for the rapid transition to a hydrogen economy in California due January 1, 2005** and to be updated bi-annually thereafter containing recommendations to the Governor and the State Legislature



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Core Values

- Energy independence
- Energy security & diversity
- Reducing air pollution
- Reducing global warming emissions
- Protecting public health
- Economic competitiveness
- Job creation



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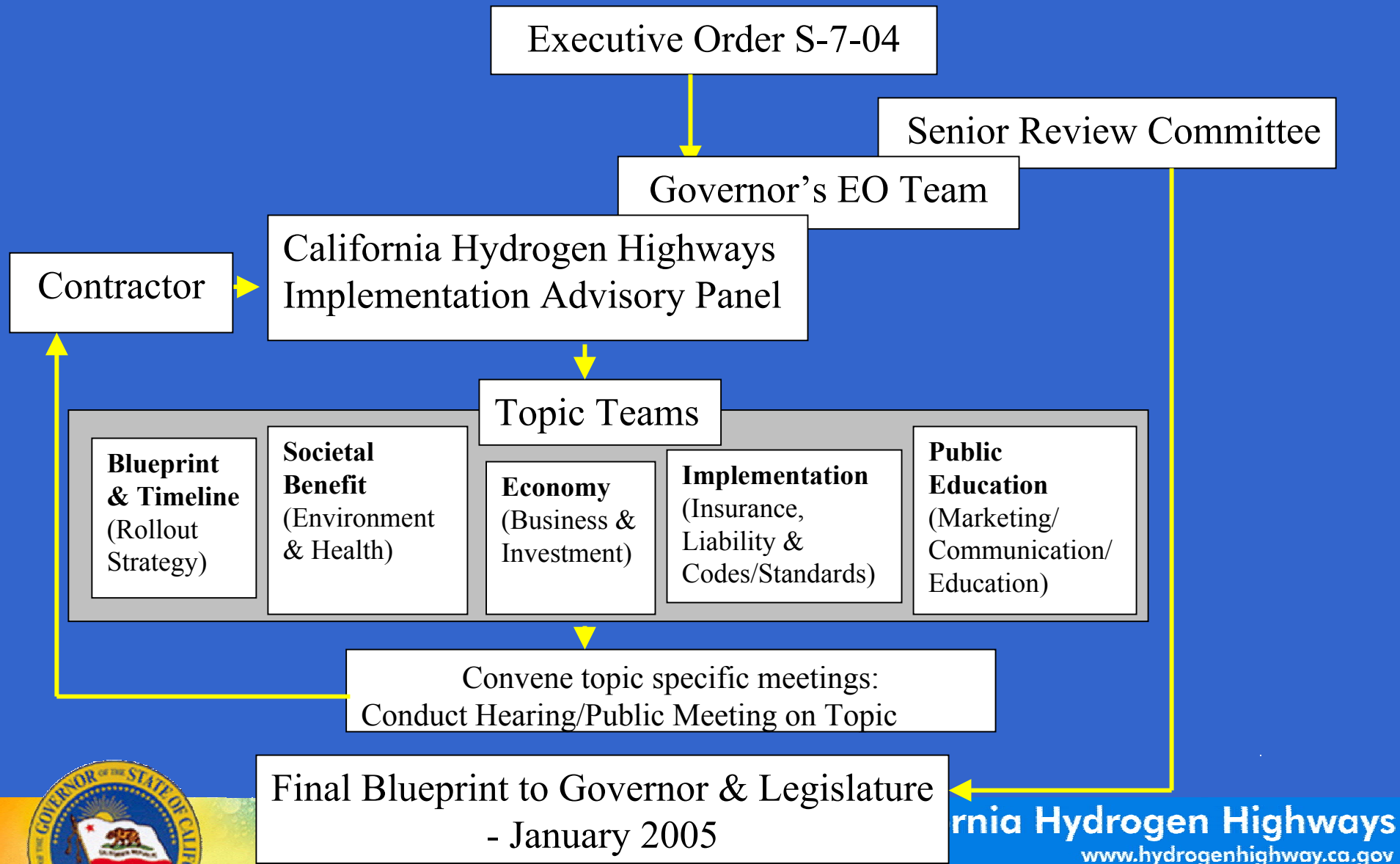
Measurements of Success

- Access
- Significant and Increasing Percentage of Renewable Hydrogen
- Balance of Commercialization Pathways
- Public Education on Hydrogen
- Commercially Viable Hydrogen Vehicles & Hydrogen Powered Devices Hydrogen Codes, Standards, Emergency Response, Training
- Research and Training
- Jobs and Business



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Operational Diagram



Governor's Executive Order Team

- Executive Order calls for CalEPA to lead the development of the Blueprint Plan
 - Secretary Terry Tamminen chairs the EO Team, the Panel and the Senior Review Committee
 - Anne Baker--Deputy Secretary for External Affairs
 - Shannon Baxter--Special Advisor on H2 and Alt Energy
 - Daniel Emmett--Advisor
 - EO Team supports the Panel, the Topic Teams and the Senior Review Committee



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Senior Review Committee

- Responsible for final approval of report
- Secretary Tamminen (Cal/EPA)
- Secretary Chrisman (Resources)
- Secretary McPeak (BTH)
- Secretary Arduin (Finance)
- Secretary Kawamura (Agriculture)
- Senator Torlakson
- Assemblymember Oropeza



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California Hydrogen Highways Implementation Advisory Panel

Each member

- represents an active partner in the CA H2 Net
- has expertise and experience to bring to the process
- volunteers time
- plans to attend five Panel meetings and a final report review hearing
- plans to provide input, review and offer revisions to improve Topic Team reports
- plans to provide input that is constructive to the well-being of the State of California and contribute to the goal of achieving the Governor's vision for hydrogen in the State in accordance with Executive Order S-7-04



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Implementation Advisory Panel

- Air Resources Board Alan Lloyd
- CEC Jim Boyd
- CalTrans Randy Iwasaki
- Air Pollution CDs Cynthia Verdugo-Peralta, SCAQMD Board
- Fuel Supplier Don Paul, ChevronTexaco
- Fuel Supplier Jeffrey Lockett, Air Products
- Utility Martha Davis, Inland Empire
- Electric Utility Ed Kjaer, S. CA Edison
- Natural Gas Utility Rick Morrow, Sempra
- US Auto Gerhard Schmidt, Ford
- Asian Auto Ben Knight, Honda
- European Auto Christoph Huss, BMW
- Academic Joan Ogden, UC Davis
- DOE Steve Chalk
- Technology Jon Slingerup, Stuart Energy
- Enviro Jason Mark, UCS
- Enviro Roland Hwang, NRDC
- CaFCP Al Weverstad, 2005 Chair
- CaSFCC Scott Samuelsen, Co-chair
- EJ representative Luis Arteaga, Latino Issues Forum

Contractor

- TIAx was selected based on their breadth of expertise
- Expertise needed in five areas
 - Stationary applications
 - Fuel development
 - Vehicle technology
 - Environmental impacts in CA
 - Economic impacts in CA



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Topic Teams

Blueprint & Timeline
(Rollout Strategy)

Societal Benefit
(Environment & Health)

Economy
(Business & Investment)

Implementation
(Insurance, Liability & Codes/Standards)

Public Education
(Marketing/Communication/Education)

- Each member
 - represents an active/interested partner in the CA H2 Net
 - has expertise and experience to bring to the process
 - volunteers time
- Each Topic Team plans to:
 - Examine key issues, probe areas of contention, recommend and prioritize solutions, and acknowledge significant dissenting viewpoints
 - Develop and present a plan to address their given challenge at a public hearing for discussion
 - Elicit and address public testimony from stakeholders
 - Present the materials at the subsequent Panel meeting



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Will be using the website's "E-List" to keep info flowing

Topic Teams

- Public Education
 - Team Manager: Melissa Meuser
 - Co-chairs: Bob Hayden, CaFCP; Don Hardesty, DOE/Sandia and Dick Schoen, SIT
- Societal Benefits
 - Team Manager: Eileen Tutt
 - Co-chairs: Stefan Unnasch, TIAX and Jack Kitowski, ARB
- Implementation
 - Team Manager: Rick Margolin
 - Co-chairs: Bill Chernicoff, DOT; Andrei Tchouvelev, Stuart and Chris Sloane, GM
- Economy
 - Team Manager: Fereidun Feizollahi
 - Co-chairs: Michael Eaves, NGVC and Chip Schroeder, Proton
- Blueprint and Rollout Strategy
 - Team Managers: Matt Miyasato and Eileen Tutt
 - Co-chairs: Cynthia Verdugo-Peralta, AQMDs; Wolfgang Weiss, DaimlerChrysler and Phil Baxley, Shell Hydrogen

Topic Team Public Meetings

- Scheduled by CalEPA
- Hearing will be webcast
- Each team will be allotted a full day
- Topic Team co-chairs, manager and contractor present to Governor's EO Team
- Presenters and Governor's EO Team accept public testimony
- Public meetings are followed Advisory Panel meetings



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California Hydrogen Highway 2004 Public Meetings Schedule

<http://www.hydrogenhighway.ca.gov/>

Meeting	Date	Time	Location
Public Education Team	August 12, 2004	9:00 a.m. – 4:00 p.m. & 6:00 p.m. – 8:00 p.m.	SCAQMD- Diamond Bar Auditorium
Societal Benefits Team	August 13, 2004	9:00 a.m. – 5:00 p.m.	SCAQMD- Diamond Bar Auditorium
Implementation Team	August 31, 2004	9:00 a.m. – 4:00 p.m. & 6:00 p.m. – 8:00 p.m.	Cal/EPA HQ- Sacramento Coastal Hearing Room
Advisory Panel Meeting	September 1, 2004	9:00 a.m. – 5:00 p.m.	Cal/EPA HQ- Sacramento Coastal Hearing Room
Economy Team	September 14, 2004	9:00 a.m. – 5:00 p.m.	SCAQMD- Diamond Bar Auditorium
Advisory Panel Meeting	October 6, 2004	4:00 p.m. – 5:00 p.m.	Cal/EPA HQ- Sacramento Central Valley Hearing Room
Rollout Strategy Team	October 7, 2004	9:00 a.m. – 5:00 p.m.	Cal/EPA HQ- Sacramento Central Valley Hearing Room
Advisory Panel Meeting	November (TBD)	TBD	Cal/EPA HQ- Sacramento
Advisory Panel Meeting	December 8, 2004	4:00 p.m. - 6:00 p.m.	Cal/EPA HQ- Sacramento

Newest CA H2 Net Station

SCAQMD August 13, 2004



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